

Amendments to the Drawings

Applicant encloses a replacement drawing sheet adding the label "Prior Art" to Fig. 14.

REMARKS

Claims 1 and 2 remain pending and are both currently amended.

The drawings stand objected to because Fig. 14 does not have the label "Prior Art." As discussed above and shown in the Enclosure, applicant amends Fig. 14 to have that label. Accordingly, withdrawal of the objection to the drawings is now solicited.

The Abstract is objected to because it recites the word "said." As shown above, applicant amends the Abstract to substitute "said" with –the–. Accordingly, withdrawal of the objection to the Abstract is now solicited.

The specification is also objected to because the abbreviations "CL", "NC", and "CAD" are not defined explicitly enough. However, these abbreviations are well-known in the art and should not need explicit definition. Nonetheless, to expedite prosecution, applicant amends the specification as shown above to provide the definitions. Accordingly, withdrawal of the objection to the specification is now solicited.

A more descriptive title of the invention is desired, and an example substitute title is suggested in the Office Action. Although applicant appreciates suggestions from the PTO, a different title is effected with the present submission. Applicant notes that this title is more descriptive.

Claim 1 is objected to because of informalities. Applicant respectfully submits that this objection should be withdrawn.

The recitation of "NC" is deemed potentially indefinite without an explicit definition of the term. However, as shown above, the specification now clearly states that "NC" is an abbreviation for numerical control. Thus, its usage in the context of the application is clear.

The Office Action indicates that “*the* bottom surface” in claim 1 should be changed to “*a* bottom surface.” Applicant responds that one skilled the art would understand, when reading “the bottom surface inside the recess,” that the recess has a bottom surface. Therefore, no amendment should be necessary. However, to expedite prosecution, applicant amends claim 1 to replace “the bottom surface” with “a bottom surface.”

Regarding the recitation “the material of said workpiece,” claim 1 no longer recites this phrase.

Regarding the recitation of “the tool,” applicant believes it should be clear that this phrase refers to a “*cutting* tool” instead of to “tool data.” However, in case there might be any doubt as to the meaning of the term, applicant amends the phrase to “the cutting tool.”

Regarding the recitation “the type, the dimension, and the material,” claim 1 no longer recites this phrase.

Regarding the recitation “said to-be-used tool,” applicant believes it should be clear that the reference is to the earlier recited “tool to be used.” However, to expedite prosecution, applicant amends the claim.

Applicant also believes that the recitation “the machining region” in claim 1 is clear, but applicant amends the claim to expedite prosecution. Applicant also changes “when the machining region” to “if a machining region” as shown above.

In view of these remarks and amendments, applicant now solicits the withdrawal of the objection to claim 1.

Claims 1 and 2 stand rejected under 35 U.S.C. § 112, second paragraph, as indefinite. Applicant respectfully submits that this rejection should be withdrawn.

Regarding the recitation of “said tool” in line 13 of claim 1, this line never recited the quoted phrase. Perhaps “said tool” in line 14 was the intended reference. As shown above, claim 1 no longer recites this phrase

Regarding “CL” recited in claim 1 without its definition provided in the disclosure, this term is now defined in the specification, as discussed above.

Regarding the recitation of “the feed speed” in claim 1, applicant amends this phrase to “a feed speed.”

Regarding the recitations of “the traveling positions” and “the identification data” in claim 1, both recitations of “the” are now deleted.

Regarding “the concave surfaces” and “the wall gaps” in claim 1, applicant amends the recitations to “a concave surface” and “wall gaps” (without “the”) as shown above.

Regarding “the minimum curvature radius” and “the minimum distance,” no amendment is necessary to provide antecedent basis, because it is inherent that a concave surface has a minimum curvature radius and that wall gaps have a minimum distance. According to MPEP § 2173.05(e),

Inherent components of elements recited have antecedent basis in the recitation of the components themselves. For example, the limitation “the outer surface of said sphere” would not require an antecedent recitation that the sphere has an outer surface.

Thus, prior explicit recitation in claim 1 of “a minimum curvature radius” and “a minimum distance” (both of them being inherent features) is not necessary to establish their antecedent bases.

Applicant respectfully disagrees that the recitation “the maximum diameter” in claim 1 causes the claim to be indefinite. This recitation is part of the phrase “the successive use of the

cutting tools in the descending order of cutting tool diameter starting with the cutting tool having the maximum diameter,” and it is inherent that, out of all the tools referenced, one of them will have the maximum diameter. Because it is inherent that there will be a maximum diameter, prior explicit recitation in the claim of “a maximum diameter” is not necessary to establish the antecedent basis. (See MPEP § 2173.05(e).)

Regarding the recitation “the constituent tools” in claim 2, this phrase is now rewritten as shown above.

Applicant respectfully disagrees that the recitation “the outside” in claim 2 causes the claim to be indefinite. This recitation is part of the phrase “said CL data generating section receives from the outside a signal,” and it is inherent that the CL data generating section has an outside from which to receive a signal. Because an “outside” is inherent, prior explicit recitation in the claim of “an outside” is not necessary to establish its antecedent basis. (See MPEP § 2173.05(e).)

Regarding the recitation “such as” in claim 1, those recitations are now removed.

In view of the remarks above and the amendments to the claims, applicant now solicits the withdrawal of the anticipation rejection.

Claims 1 and 2 stand rejected under 35 U.S.C. § 102(e) as anticipated by *Teramoto et al.* (U.S. Published Application No. 2003/0171842). Applicant respectfully traverses this rejection.

Claims 1 and 2 describe an automatic programming apparatus having a “concave portion machining tool storing section,” and, despite the citation provided in the Office Action, applicant finds no teaching in *Teramoto et al.* of a concave portion machining tool storing section that meets the detailed description of the claims. Claim 1 (with the amendments addressing matters of form) describes the element as follows:

a concave portion machining tool storing section for storing *[[the]]* identification data of a plurality of cutting tools that are selected in advance as cutting tools to be used for the machining of said recess from among the cutting tools the data of which is stored in said tool data storing section, and that have diameters different from each other and include at least: a minimum diameter cutting tool *having a diameter smaller than twice the minimum curvature radius of *[[the]]* a concave surface inside said recess of said product and than the minimum distance of *[[the]]* wall gaps inside said recess*; and a cutting tool having a larger diameter than the minimum diameter cutting tool [*emphasis added*].

Claim 2 depends from claim 1, so it also describes this subject matter. After studying *Teramoto et al.*, applicant respectfully disagrees with the statement in Office Action (page 8, bottom) that this reference teaches the above-emphasized claimed subject matter in Fig. 16 and in paragraphs [0177]-[0193].

Fig. 16 illustrates models of tool information. The drawing itself does not disclose a minimum diameter tool having a diameter smaller than twice the minimum curvature radius of the concave surface inside a recess of a product. Even if the drawing did provide that disclosure, it does not disclose that the minimum diameter tool has a diameter smaller than the minimum distance of wall gaps inside the recess.

Regarding the text portions of *Teramoto et al.* cited in the Office Action, that is, paragraphs [0177]-[0193], applicant does not find the claimed subject matter quoted above. Applicant acknowledges that paragraph [0183] discusses the maximum and minimum diameter of used tools, but this is not a disclosure of the specifically-described relationship in the claims of the diameter to the recess of the product.

Accordingly, it must be concluded that *Teramoto et al.* cannot anticipate claims 1 and 2. Thus, withdrawal of the anticipation rejection is now solicited.

If for some reason the Examiner ultimately decides to maintain the rejection, applicant requests that he explicitly indicate, beyond just citing seventeen paragraphs and a figure, where *Teramoto et al.* supposedly discloses the subject matter quoted above from the claim. The citation should clearly discuss the claimed quantitative relationship between the diameters, curvatures, and gaps in order to provide a valid justification of an anticipation rejection.

In a separate matter, applicant amends a sentence on page 4 of the specification to change the grammar.

In view of the remarks above, applicants now submits that the application is in condition for allowance. Accordingly, a Notice of Allowability is hereby requested. If for any reason it is believed that this application is not now in condition for allowance, the Examiner is welcome to contact applicant's undersigned attorney at the telephone number indicated below to discuss resolution of the remaining issues.

If this paper is not timely filed, applicant petitions for an extension of time. The fee for the extension, and any other fees that may be due, may be debited from Deposit Account No. 50-2866.

Respectfully submitted,

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Enclosure: Replacement drawing

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